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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
COLON, GERMAN	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/664,731	YAMAZAKI ET AL.	
	Examiner	Art Unit	
	German Colón	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *60-76* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *60-76* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/587,369.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/18/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Preliminary Amendment

1. The Pre-Amendment, filed on September 18, 2003, has been entered and acknowledged by the Examiner.

2. Cancellation of claims 1-59 has been entered.

3. Addition of claims 60-76 has been entered.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 76 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 76 recites the limitation "the crystalline semiconductor film" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 60, 64, 71 and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by Tang et al. (US 5,684,365).

Regarding claims 60 and 64, Tang discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **41**;

forming an insulating film **52** over the plurality of TFTs;

forming a passivation film **74** over the insulating film; and

forming an organic electroluminescent element over the passivation film.

Regarding claims 71 and 74, Tang discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **41**;

forming a leveling film **52** over the plurality of TFTs;

forming a passivation film **74** over the insulating film; and

forming an organic electroluminescent element over the passivation film.

8. Claims 60, 62-64, 71, 73 and 74 are rejected under 35 U.S.C. 102(e) as being anticipated by Hamada et al. (U S6,114,183).

Referring to claims 60 and 64, Hamada discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **12**;

forming an insulating film **35** over the plurality of TFTs;

forming a passivation film **39** over the insulating film; and

forming an organic electroluminescent element over the passivation film.

Referring to claims 62 and 63, Hamada discloses the passivation film comprising a material selected from the group consisting of silicon nitride and silicon oxynitride (see Col. 6, lines 65-67).

Referring to claims 71 and 74, Hamada discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **12**;

forming a leveling film **35** over the plurality of TFTs;

forming a passivation film **39** over the insulating film; and

forming an organic electroluminescent element over the passivation film.

Referring to claim 73, Hamada discloses the passivation film comprising a material selected from the group consisting of silicon nitride and silicon oxynitride (see Col. 6, lines 65-67).

9. Claims 60-64 and 71-74 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada (US 6,246,179).

Regarding claims 60 and 64, Yamada discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **10**;

forming an insulating film **17** over the plurality of TFTs;

forming a passivation film **19** over the insulating film; and

forming an organic electroluminescent element over the passivation film.

Regarding claim 61, Yamada discloses the insulating film **17** comprising a resin film (see Col. 6, lines 3 and 22-23).

Regarding claims 62-63, Yamada discloses the passivation film comprising silicon nitride.

Regarding claims 71 and 74, Yamada discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **10**;

forming a leveling film **17** over the plurality of TFTs;

forming a passivation film **19** over the insulating film; and

forming an organic electroluminescent element over the passivation film.

In regards to claim 72, Yamada discloses the leveling film **17** comprising a resin (see Col. 6, lines 3 and 22-23).

In regards to claim 73, Yamada discloses the passivation film comprising silicon nitride.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 65, 67, 75 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada et al. (US 6,114,183) in view of Yudasaka (US 6,359,606).

Regarding claim 65, Hamada discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **12**;

forming an insulating film **35** over the plurality of TFTs;

forming a passivation film **39** over the insulating film; and

forming an organic electroluminescent element over the passivation film. Hamada is silent regarding the limitation of forming a second passivation film over the EL element.

However, in the same field of endeavor, Yudasaka discloses an active matrix display comprising a plurality of TFTs and having a passivation film made of silicon nitride over an electroluminescent element with the purpose of inhibiting the deterioration of the device by protecting the EL element from oxygen and moisture (see Col. 10, lines 65-67, in view of Col. 1, lines 50-53 and Col. 6, lines 55-57). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a passivation film over the electroluminescent element in order to inhibit the deterioration of the device by protecting the EL element from oxygen and moisture.

Regarding claim 67, Hamada-Yudasaka discloses each of the passivation films comprising silicon nitride.

Referring to claim 75, Hamada discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **12**;

forming a first insulating film **35** comprising Si and N over the plurality of TFTs;

forming a leveling film **39** over the insulating film;

forming a second insulating film **44** comprising silicon nitride; and

forming an organic electroluminescent element over the second insulating film. Hamada is silent regarding the limitation of forming a third insulating film comprising silicon nitride over the EL element.

However, in the same field of endeavor, Yudasaka discloses an active matrix display comprising a plurality of TFTs and having an insulating film made of silicon nitride over an electroluminescent element with the purpose of inhibiting the deterioration of the device by protecting the EL element from oxygen and moisture (see Col. 10, lines 65-67, in view of Col. 1, lines 50-53 and Col. 6, lines 55-57). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a silicon nitride film over the electroluminescent element in order to inhibit the deterioration of the device by protecting the EL element from oxygen and moisture.

Referring to claim 76, claim 76 is rejected over the reasons stated in the rejection of claim 75.

12. Claims 65-67, 69, 75 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 6,246,179) in view of Yudasaka (US 6,359,606).

In regards to claim 65, Yamada discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **10**;

forming an insulating film **17** over the plurality of TFTs;

forming a first passivation film **19** over the insulating film; and

forming an organic electroluminescent element over the passivation film. Yamada is silent regarding the limitation of forming a second passivation film over the EL element.

However, in the same field of endeavor, Yudasaka discloses an active matrix display comprising a plurality of TFTs and having a passivation film made of silicon nitride over an electroluminescent element with the purpose of inhibiting the deterioration of the device by protecting the EL element from oxygen and moisture (see Col. 10, lines 65-67, in view of Col. 1, lines 50-53 and Col. 6, lines 55-57). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a passivation film over the electroluminescent element in order to inhibit the deterioration of the device by protecting the EL element from oxygen and moisture.

In regards to claim 66, Yamada-Yudasaka discloses the insulating film **17** comprising a resin film.

In regards to claim 67, Yamada-Yudasaka discloses each of the passivation films comprising silicon nitride.

Referring to claim 69, Yamada discloses the step of forming an insulating film comprising N and Si between the substrate and the plurality of TFTs (see Col. 5, lines 30-32).

Referring to claim 75, Yamada discloses a method of manufacturing a display device comprising the steps of:

forming a plurality of TFTs over a substrate **10**;

forming a first insulating film **32** comprising Si and N over the plurality of TFTs;

forming a leveling film **15** over the insulating film;

forming a second insulating film **19** comprising silicon nitride; and

forming an organic electroluminescent element over the second insulating film. Yamada is silent regarding the limitation of forming a third insulating film comprising silicon nitride over the EL element.

However, in the same field of endeavor, Yudasaka discloses an active matrix display comprising a plurality of TFTs and having an insulating film made of silicon nitride over an electroluminescent element with the purpose of inhibiting the deterioration of the device by protecting the EL element from oxygen and moisture (see Col. 10, lines 65-67, in view of Col. 1, lines 50-53 and Col. 6, lines 55-57). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a silicon nitride film over the electroluminescent element in order to inhibit the deterioration of the device by protecting the EL element from oxygen and moisture.

Referring to claim 76, claim 76 is rejected over the reasons stated in the rejection of claim 75.

13. Claims 68 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada-Yudasaka as applied to claim 65 above, and further in view of Kikukawa et al. (US 6,329,036).

Regarding claim 68, Yamada-Yudasaka discloses the insulating passivation layers comprising silicon nitride, but is silent regarding the limitation of the passivation layers comprising Si, Al, N, O and a rare earth element.

However, Kikukawa discloses a semiconductor device comprising an insulating film, and teaches a silicon nitride film and a rare earth-containing SiAlON film as art recognize equivalent materials. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a rare earth-containing SiAlON film, as disclosed by Kikukawa, instead of a silicon nitride film, as disclosed by Yamada-Yudasaka, since Kikukawa teaches both films to useful insulating materials and art recognized equivalents (see Col. 8, lines 9-13). Further, it has been held to be within the general skill of an artisan to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Regarding claim 70, claim 70 is rejected over the reasons stated in the rejection of claim 68.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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